This document is published by Bellcore to supply the member of the Interconnection Group and their Subject Mater Experts with information on various regulatory issues of interest to them. The information is based solely on publicly available sources.

Bellcore makes no representation or warranty, express or implied, with respect to the sufficiency, accuracy, or utility of any information or opinion contained herein. Bellcore expressly advises that any use of or reliance upon said information or opinion is at the risk of the user and that Bellcore shall not be liable for any damage or injury incurred by any person arising out the sufficiency, accuracy, or utility of any information or opinion contained herein. While Bellcore has sought to summarize accurately information it received from others, it has not verified the contents. Thus, information to be used in regulatory submissions or proceedings should be verified with the source companies and/or regulatory bodies.

The attached matrix contains only those SQMs (Service Quality Measurements) to which penalties apply in one or more jurisdictions. The PENALTY indicates to the origin of the penalty in an abbreviated form.

- "A" Interconnection agreements in general
- "O" State regulatory order
- "M" Merger agreement

The matrix also provides the associated benchmarks and indication as to whether or not the penalties are self-executing followed by the actual penalty imposed and the companies in which the penalty is being proposed or has been implemented.

Note: U S WEST has not offered any remedies, fines/penalties/bill credits/liquidated damages.

Measurements to which penalties apply	Penalty Applies to	Benchmark	Self Executg	Pondly	AN	ВА	BS	СВТ	GTE	SBC	SNET	USW
Average installation interval	1	Parity - Resale (MI) 80% within 5 days for Unbundled Loops (MI)	Yes	Proposed in Mich to refund a portion of the recurring charge	1							
% installations completed on time	0	POTS – 99.0% Digital Specials – 90.0% Analog Specials – 90.0%	No	A percentage of total recurring revenue will be credited to the CLECs bill (separate % credited for both performance level and compatibility)							1	
% orders completed on time		Standard Intervals vary by type of Service, UNE, etc. % quantity		95%				1				
% Confirmed Due Dates Not Met	I, A	Parity – Resale (MI) <20% of Loop Installations will be completed beyond the due date (MI) 80% of Loop Installations completed on time.	Yes	Proposed in Mich to refund a portion of the recurring charge. \$75,000 penalty when benchmark is not met for 3 consecutive months.	1							
Average Reject Notice Interval	1	80% of reject notices will be sent within 24 hrs for orders received electronically (MI)	Yes	Proposed in Mich to refund a portion of the recurring charge	1							
Average Completion Notice Interval	1	80% of completion notices provided within 48 hours	Yes	Proposed in Mich to refund a portion of the recurring charge	1							

Maintenance & Repair

Measurements to which penalties apply	Penalty Applies to	Benchmark	Self Executg	Penalty	AM	BA	BS	CBT	GTE	SBC	SNET	USW
% maintenance appointments met: I. POTS II. Digital Special III. Analog Special	0	POTS – 94% Digital Specials – 70% Analog Specials – 70 %	No	A percentage of total recurring revenue will be credited to the CLEC's bill (separate percent credited for both performance level and comparability).							1	
Network reports per 100 lines	0	1.9 RPHL	No	A percentage of total recurring revenue will be credited to the CLEC's bill (credit given for performance level only).							٧	
% Out of Service >24 Hours	A	80% of out of service troubles will be repaired within 24 hours	No	\$75,000 penalty when benchmark is not met for 3 consecutive months.	1							

General

4	Measurements to which penalties apply	Penalty Applies to	Benchmark	Self Executg	Penalty	AM	BA	BS	CBT	GTE	SBC	SNET	USW
	Pre-Ordering Interface – % Time Unavailable	l	The interface will be unavailable ≤1% of the time. (MI)	Yes	Proposed in Mich to refund a set amount per transaction.	1							
	Average Cycle Time -TN Selection -Due Date Selection -Pre-Ordering CSR -Address Validation	I	The interfaces will be unavailable ≤1% of the time. (MI)	Yes	Proposed in Mich to refund a set amount per transaction.	1							
	Ordering ASR - % Time Unavailable	I	The interface will be unavailable ≤1% of the time. (MI)	Yes	Proposed in Mich to refund a set amount per transaction.	1							
	EBTA - % Time Unavailable	I	The interface will be unavailable ≤1% of the time. (MI)	Yes	Proposed in Mich to refund a set amount per transaction.	1			:				

Billing

Measurements to which penalties apply	Penalty Applies to	Sondomark	Self Executg	Panaly		BA	BS	CBT	GTE	SBC SET	usw
Daily Usage Timeliness – Not Provided on time > 5 days	I	<2% of Daily Usage Files will not be provided within 5 days.	Yes	Proposed in Mich to refund a set amount per transaction.	7						

OS/DA/DL - N/A

Network Performance

Measurements to which penalties apply	Penalty Applies to	Benchmark	Self Executg	Penalty	AM :	ВА	BS	СВТ	GTE	SBC	SNET	USW
Switch outage minutes per access line	0	1.3 minutes per access line	No	A percentage of total recurring revenue will be credited to the CLEC's bill (credit given for performance level only)							٧	

Collocation Provisioning

Measurements to which penalties apply	Penalty Applies to	Benchmark	Self Executg	Penalty	AM	ВА	BS	CBT	GTE	SBC	SNE	USW
Average Time to Respond to a Physical Collocation Request	1	80% of collocation requests will be responded to within 10 days.	Yes	Proposed in Michigan to refund a portion of the monthly floor space charge.	7							
% Due Dates Missed in Provision of Collocation Arrangement	I	≤20% of due dates for collocation will be missed.	Yes	Proposed in Michigan to refund a portion of the project management fee.	1							

Database Updates

Measurements to which penalties apply	Penalty Applies	Benshmark	Self Execute	Renally	AM	BA.	BS	CBT	GTE	SBC	SNET	USW
% 911 Customer Record Files Not Processed by Next Business Day (Elec)	-	Parity with retail	Yes	Proposed in Michigan to refund a portion of the tariffed monthly rate for 911 administration.	٧							

Interconnect/Unbundled Elements and Combos (IUE) - N/A

This document is published by Bellcore to supply the member of the Interconnection Group and their Subject Mater Experts with information on various regulatory issues of interest to them. The information is based solely on publicly available source's.

Bellcore makes no representation or warranty, express or implied, with respect to the sufficiency, accuracy, or utility of any information or opinion contained herein. Bellcore expressly advises that any use of or reliance upon said information or opinion is at the risk of the user and that Bellcore shall not be liable for any damage or injury incurred by any person arising out the sufficiency, accuracy, or utility of any information or opinion contained herein. While Bellcore has sought to summarize accurately information it received from others, it has not verified the contents. Thus, information to be used in regulatory submissions or proceedings should be verified with the source companies and/or regulatory bodies.

SQM Comparison Matrix – LCUG – FCC – DOJ - Company

The matrix is divided into 8 sections, which map to the layout of the LCUG Version 7.0 document:

- 1) Ordering & Provisioning
- 2) Maintenance & Repair
- 3) General
- 4) Billing
- 5) OS/DA/DL
- 6) Network Performance
- 7) Collocation Provisioning
- 8) Interconnection/Unbundled Elements and Combos (IUE)

In addition, the following three supplemental sections have been added:

- 1) Poles, Conduits & Rights of Way
- 2) NXX
- 3) Bona Fide Requests (BFRs)

An entry of "I" for ILEC and "C" for CLEC appears in the Penalty column and denotes whether the "I" or "C" is assessed the penalty. An entry of "A" denotes that penalties can result from terms related to interconnection agreements.

Note:

In some instances the individual company matrices returned to Bellcore for compilation were populated with measurement formulas. The attached summary matrix includes a check mark next to the measurement in which the formula was entered as opposed to a Bellcore interpretation of the measurement formulas supplied.

Measurement	LCUG	FCC	DOJ 1	AM	BA ²	BS	CBT	GTE	SBC	SNET	USW	Penalty
Average completion interval	1	√	1			1 1				√	1	
Average Offered interval	1				√3					1		· · · · · · · · · · · · · · · · · · ·
Average/mean Installation Interval		1	1	1					1		1	
Standard deviation of interconnection trunk installation interval									1			
% orders completed on time	1	1				1	1					
% installations completed within "X" business days			1						1			
% installation appointments/ commitments met										1	1	ı
% Confirmed due dates not met				7								I, A
% missed due dates		1	1				1		1			
% missed due dates interconnection trunks									1			
% ILEC caused missed due dates			1						1			
% ILEC caused missed due dates > 30 days									1			
# orders cancelled after due date caused by ILEC									1			

For the most part, all items in this column include Resale POTS & Specials, UNEs, Interconnection trunks and INP in all sections of the matrix.

² O&P information is reported separately for POTS (Res. & Bus. separately), SPECIALS and trunks. It is totaled for all orders, separated by type of service and mechanized and non-mechanized orders. In addition, orders involving dispatch are reported separately from non-dispatched orders.

³ Reported in total and separated for POTS, SPECIALS, trunks, DSO, DS1, and DS3 based on NY carrier/carrier agreements. POTS & SPECIALS are further separated by dispatched and non-dispatched. POTS dispatched orders are also separated by 1-5 lines, 6-9 lines and > 10 lines.

Measurement	LCUG	FCC	DØJ	AM	BA	BS	CBT	GTE	SBC	SNET	Wau	Penalty
% company missed due dates due to lack of facilities			٧	<u> </u>		1			1,			
Delay days for missed due dates due to lack of facilities			1						1			
Delay days for missed due dates									1			
% CLEC caused due date misses											1	
% order accuracy	V											
Mechanized provisioning accuracy			V						1			
% mechanized order flow through	1	1			1	1						
Order process % flow thru			1						√		1	
% Electronic processing				1								
% order rejections	1		1	1	1	1			1			
Average submissions per order	1	1										
Average reject notice interval	1	1		1		1					1	
Average reject response time					1							
Mean time to return mechanized rejects			٧						7		1	

Measurement	LCUG	FCC	DOJ	AM	BA	BS	CET	GTE	SBC	SNET	USW	Penalty
% reject within X hours		3 307 2 38			14.				1			
Percent mechanized rejects returned within 1 hour of the start of the EDI/LASR batch process			٧						٧			
FOC interval	1					1					1	
Average order confirmation response time					1							
% order confirmation					√ *		1.					
% FOCs in "X" hrs			1			+			1			
% FOC ≤or within 24 hours					1					1		1
855 FOC response time %<24. <48, <96, >96 hrs				1	1							
% FOC by 5PM next business day							1					
Average time to return FOC/855 FOC		1	1	1					1			
Jeopardy interval	1	7				1						
Average completion notice interval	1	1		1		1						i
Average interval completed					√5							

 ⁴2 hrs. mechanized POTS., SPECIALS (NY & MA)

 ²⁴ hrs. non mechanized POTS (NY & MA)

 ²⁴ hrs non mechanized < 10 lines POTS (NY & MA)

 ⁷² hrs. non mechanized ≥ 10 lines POTS, SPECIALS (NY & MA)

 ⁴⁸ hrs. non mechanized SPECIALS < 10 lines (NY & MA)

^{■ 10} BUSINESS days trunks

Average interval completed is broken down into within 1 day, 2 days, 3 days, 4 days, and 5 days depending upon the type of service (POTS, SPECIALS, trunks, DSO, DS1, and DS3) and in some cases, the number of lines based on NY carrier/carrier agreements. POTS & SPECIALS are further separated by dispatched and non dispatched.

Measurement	LCUG	FGC	DOJ	AM	ВА	BS	CBT	GTE	SBC	SNET	USW	Penalty
Completion notification – average response time % on time					٧	1						
% mechanized completions returned within 1 hr of batch completion notice			7						1			
Average time to return mechanized completions			1						1			
% completion/attempts w/o notice or with < 24 hrs notice	√ .											
% notification of completed dispatched orders < 2 hours										1		
% jeopardies	√	√				√						
% missed appmts					√6							
% missed appmts customer					NY,MA							
Average delay days					1							
Average delay days facilities					1							
Average coordinated conversion interval	1	1				1					7	
% missed mechanized INP/PNP conversions							-		1			
% on time LNP (POTS)					1 1							
% on time UNE hot cut (POTS)					1							
% service loss from early cuts	1											
% premature disconnect (coordinated cut-overs)									1			

⁶ Totaled for company and separately for complex orders, dispatched orders, non dispatched ⁷ Under development.

Measurement	LCUG	FCC	DOJ	AM	BA	BS	CBT	GTE	SBG	SNET	USW	Penalty
% service loss from late cuts	1					 			·			
% ILEC caused delays (coordinated cut-overs)						1			1			
Held order interval	1	1			1	1						
% missed appmts facilities					1							
# of facilities misses delayed > 30 days					1							
Average Interval for past due orders				1								
% late orders completed > 15 days past due date											1	
% orders held 6-30 days		_		1							†	
% orders held >30 days				√								
% orders held > 90 days	1					1						
% orders held ≥ 15 days	1					1	1			1		
% Local Number Portability (INP) within commitment window		-								1		

Maintenance & Repair

Measurement	LCUG	FCC	DOJ	AM	BA '	BS	CBT	GTE	SBC	SNET	USW	Penalty
	1.1.1.1		ļ			1					 	
Mean time/time to restore/repair	1	1	1		1	14	1		1		٧	I
Mean time to repair NXXs									1			
% troubles resolved within estimate		1									1	
Mean time to repair/restore network troubles				1						1		l
Average jeopardy notice interval for maintenance/ trouble handling	1											
Repeat trouble rate	1		1				1		1			1
% Repeat maintenance/				1	1	V			1 1		1	
subsequent reports												
Repeat trouble rate within 30 days		1			1	1				1		
30 day trouble frequency		1										
% troubles within 7 days of an installation					√ √							
% troubles within 30 days of an installation					1							
Trouble report rate	V			1	1	1			1		1	1
% CPE Reports					1							
% no trouble found/test OK					1							
% no access					1							
% troubles in 30 days of new installations & other order activity	1					1	1		1		1	

⁸ Reported separately by type of service network, troubles, CO, troubles, loop troubles for dispatched and non dispatched trouble reports..

Maintenance & Renair

Measurement	LCUG	FCC	DOJ	AM	BA	BS	CBT	GTE	SBC	SNET	USW	Penalty
		AMONG 2	ļ	1 3 11			<u> </u>				↓	
%Installation Trouble Reports (7 days 9) (10 days 10)				٧					٧			
% customer troubles resolved within estimate	1	1				1						
% Repair commitments not met (missed)			7	1	1				1			1
% maintenance appmts/ commitments met; POTS, Digital Specials, Analog										1	1	ı
Special					+		-1			1	 	<u> </u>
Network reports per 100 lines			<u> </u>		- 		1 1			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \		<u> </u>
% trouble reports notification of completion within 24 hrs	!									1		
Receipt to clear duration			√				1		√			
% out of service < 24 hrs			1						1		1	
% Out of service >24 hrs	. =			1	1						-	Α
% Out of service X 11 hours					1							
Failure frequency			1						1			
Average trunk restoration interval		7	1						1			

Applies to Ameritech
 Applies to SBC
 X is a variable and changes depending upon type of service, dispatched troubles, non dispatched

General

Measurement	LCUG	FCC	DOJ	AM	BA	BS	CBT	GTE	SBC	SNET	USW	Penalty
% system/gateway availability	٧	V			√ NY ¹²	√,	<u>* </u>			√ 13	1	
Pre-ordering interface - % time unavailable				1								1
Ordering ASR - % Time Unavailable				1								1
EBTA - % Time Unavailable				1								ı
Averaged response time for OSS interfaces			1		1				1	√ 14		
Averaged OSS response/cycle time address verification	٧	1	1	٧	NY	1			1		1	ı
Averaged OSS response/ cycle time request for TN	1	1	1	7	NY	1			1		1	l
Averaged OSS response/ cycle time request for CSR	1		1	1	1	1			1		1	1
Averaged OSS response/ cycle time product/ service/ facility/function availability	1	1	1	٧	NY	1			1		1	
Averaged OSS response/ cycle time service appmt/due date scheduling/ availability	1	1	1		NY	1			1		٧	
Averaged OSS response /cycle time dispatched	1		V			1			1			
Average response time other pre ordering					MA							
Average OSS response time trouble reporting					NY							

Data is segregated by total, prime and non-prime
 % availability of MSAP (Mechanized Services Access Platform)
 % service requests acknowledged ≤ 5 seconds MSAP

General

Messurement	LCUG	FCC	DOJ	AM	BA	BS	CBT	GTE	SBC	SNET	USW	Penalty
EASE average response time			J				* 3x.25		1			
Mean time to answer	1		V			٧.,	ļ	 	<u> </u>			
LOC average speed of answer			1						1			_
% busy LOC			1						1			
% calls answered ≤ 20 seconds –maintenance center										1		
Average speed of answer – repair				1	1						1	
Speed of answer – repair %> 20 sec				1								
LSC average speed of answer			1						1			
% busy LSC			1						1			
% calls answered within or ≤ 20 seconds –provisioning center										1	1	
Average speed of answer – ordering				1	NY							
Speed of answer – ordering % >10 sec				1								
Call abandonment rate	V											

Billing

Measurement	LCUG	FCC	DOJ	AM	EA	BS	CBT	GTE	SBC	SNET	USW	Penalty
Mean time to provide recorded usage records	1	1				7.,						·
Daily usage feed timeliness			1						1		1	
Daily usage feed timeliness – not provided on time ≤ 5 days				1								ı
% usage polling system availability										1		
% usage data transmitted in ≤ 3 days					1					1		
% usage data transmitted in 4 days					1							
% usage data transmitted in ≤ 5 days					1							
% usage data transmitted in_8 days	, ,				1					1		
% usage data transmitted in X days			1									
Billing timeliness (wholesale/carrier bill)			1		1							
AEBS bills delivered late				1								
CABS bills delivered late				1								
Bills delivered within 10 days											1	
Mean time to deliver invoices	1	1				1						
% invoice accuracy	1					1					1	
% of accurate & complete formatted mechanized bills			1						1			
% usage accuracy	1					1						

Measurement	LCUG	FCC	DOJ	AM	BA	BS	CBT	GTE	SBC	SNET	USW	Penalty
% usage records returned		<u> </u>			NY							
Billing accuracy (CRIS, CABS, toll/usage)			1			-1			1			
% of billing records transmitted correctly			1						1			
Billing completeness			1						1			
Unbillable usage			1						1			

OS/DA/DL

Messurement	rcne	Fee	DOJ	AM	BA	BS	CBT	GTE	SBC	SNET	USW	Penalty
Mean time to answer	1		in a company			√,	<u> </u>					
DA average speed of answer			1	1					1			
% DA calls answered within 20 seconds											1	
DA grade of service			1						1			
OS average speed of answer			1	1					1			
% OS calls answered within 20 seconds											1	
OS grade of service			1						1			· · · · · · · · · · · · · · · · · · ·
% calls abandoned	<u> </u>				†	· ·			1		<u> </u>	
% calls deflected									1			
Non-call busy work volumes							1	1	1	†		
Average work time									1			
Average time provided to proof updated listings prior to publication	1										-	
% DA database updates completed within 72 hours									1			
Average update interval for DA database									1			
% DA database accuracy for manual updates									1			
% DA database update electronic flow thru									1			

Network Performance

Measurement	LCUG	FCC	DOJ	AM	BA 18	BS	CET	GTE	SBC	SNET	USW	Penalty
	LOUG		J-0-0	~		50		1		JAE.	0011	- Grimity
% call completion (inbound & outbound)	1											
Attempts blocked - Interlata				1	T	Ţ ,						
Attempts Blocked - Intralata				1								
Mean time to notify CLEC of network incident/outage	1											
Transmission quality	1											
% trunk blockage		1	1						1 1		1	
# of and % final trunk groups exceeding blocking design standard					NY							
# of and CLEC final trunk groups blocked for 2 &/or 3 consecutive months					NY							
Final trunk group blocking – No EXCLUSIONS					NY							
Common transport blockage		1	1			l			1		<u> </u>	
Distribution of common transport trunk groups exceeding 2%			7						1			
Switch outage minute per access line										1		1
# of failures					NY, MA							
% failure frequency					MA							
% without report outstanding					MA							

¹⁵ Trunks only

Collocation Provisioning

Measurament	LCUG	FCC	DOJ	AM	BA	BS	CBT	GTE	SBC	SNET	USW	Penalty
Average/mean time to respond to collocation request ¹⁶	٧			7		٧.١			1			1
Average/mean time to provide collocation arrangement	1			1		1			1			
% collocation due dates missed	1			1		1			1			1
% requests processed within 35 work days									1			

Database Updates

Messulement	LCUG	FCC	poJ	ДМ	BA	BS	CBT	GTE	SBC	SNET	USW	Penalty
Average update interval	1	1							1			
% 911 customer record files not processed by next business day (Elec)				1								I
% update accuracy	1	1		<u> </u>					1			
% Errors in 911 customer records received (Elec)				1								
Average time to clear errors (911)			1						1			
% missed due dates		1										

¹⁶ It is not clear how this differs from other provisioning measurements such as the FOC interval.

Interconnect/Unbundle	ed Elemei	nts and	Combo	s (IUE)								
Measurement	rcne	FCC	1969	AM	EA	B\$	CET	GIE	SBC	SNET	USW	Penalty
Function availability	1			_								
Timeliness of element performance	1					'1						

Poles, Conduits & Rights of Way

i dide, dell'adice di l'igili	• • · · · · · · · · · ·										
Measurement	LCUG	F66 D0	J AM	BA	B\$	CBT	GTE	SBC	SNET	USW	Penalty
% requests processed within								1			
35 work days											
Average days to process								1	}		
request				<u> </u>						<u> </u>	

NXX

Measurement	rene	FCC	DOJ	AM	BA	BS	CBT	GIE	SBC	SNET	USW	Penalty
% NXXs loaded & tested prior to LERG effective date			:						1			
Average delay days for NXX loading & testing									1			

Bona Fide Request Process (BFRs)

A Salignorit	rcue	FGC	001	AU	BA .	6 8	CET	die	SPC	SNET	USW	Perualty
% requests processed within 45 business days									1			
% quotes within 30 business days									٧			